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KAZAKH REDUCTION AND METALLURGICAL PLANTS

Ye. I. Shlifshteyn

During the new Five-Year Plan, Kazakhstan is proceeding toward the creation of an important branch of heavy industry, namely, ferrous metallurgy.

Many branches of the ore-mining industry underwent intensive development in Kazakhstan during World War II by supplying the metallurgical industry with such components of high-grade steels and hard and superhard alloys as manganese, chromium, molybdenum, tungsten, vanadium, and others.

The extensive deposits in South Kempirsay (Aktyubinsk Oblast) of high-grade chromites (50-60 percent chromic oxide), used for the production of ferrochrome and in the chemical industry, were developed before the war, making Kazakhstan an important world center for chromites and a leader in the Soviet chromite industry. Production of Yuzhnyy (South) Kempirsay chromites in the area served by the Kandagach-Orsk rail line amounted to 87 percent of Soviet production in 1944.

During the war, the first manganese mines were established in the desert areas of central Kazakhstan at Dzhezdy and Nayzatas. A spur rail line connected them with Dzhezkazgan (on the Dzhezkazgan-Zharyk line). Molybdenum as an associated mineral of copper ore was mined in east Kounrad, and tungsten was mined in north Kounrad. The Akcha-Tau tungsten-molybdenum mine in the Balkhash region was explored and is being exploited. Vanadium is now being mined in the northwestern parts of the Kara-Tau Mountain Range, in the vicinity of the sandy Muyun-Kum Desert. A concentration plant for the production of molybdenum concentrates was established at Balkhash.

Kazakh chromium, manganese, molybdenum, tungsten, and vanadium were important in supplying the Ural metallurgical plants, which produced corresponding types of metals essential for defense needs.

The first line of the Aktyubinsk Ferrochrome Plant (6 km from Aktyubinsk), Kazakhstan's first ferrous-metallurgical enterprise, was put into operation in 1943. The plant has a sound source of raw material supply in Yuzhnyy Kempirsay chromites. The Ilek River supplies water to the plant, and Berchogur and Karaganda supply coal. Deposits of fluxes and construction materials border on

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the Kempirsay chrome massif; lean chromite and magnetite ores of the area are used in the manufacture of refractory materials.

During the war, the Kazakh Metallurgical Reduction Plant was built near Karaganda, and the new city of Temir-Tau grew up beside it. This plant reprocesses scrap iron from the industrial centers of Kazakhstan and neighboring regions. The first steel was produced there in 1944; the first rolled iron, in 1946. Thus, Kazakhstan already manufactures its own steel, rolled iron, and cast iron. Construction of the reduction plant will be completed during the first 2 years of the new Five-Year Plan. In 1950, the plant will furnish the Kazakh Republic with 72,000 tons of steel.

The construction of a large plant with a complete cycle of metallurgical production -- blast furnace, steel foundry, rolled iron, and coke -- is being undertaken during the postwar Five-Year Plan.

The Kazakh Metallurgical Combine will furnish millions of tons of pig iron and millions of tons of steel annually. The combine will include Chamotte, Dinas, and many other secondary shops and plants. A powerful TETs will provide the combine with steam and power.

Coincidental with fully providing Kazakhstan economy with pig iron, steel, and various kinds of rolled iron such as rails, sheet iron pipes, and structural iron, opportunity will be created to develop the metal-working and machine-building industries in the Republic, thereby permitting a rise in the Emba oil industry (which it will supply with pipe) and new railroad construction.

On the basis of Atasu and Karkaralinsk ores, a new metallurgical center is being established in Temir-Tau, near Karaganda.

The industrial utilization of Kazakhstan's own ores came about as a result of extensive geological prospecting work which was carried out in the post-Revolutionary period and is being continued during the new Five-Year Plan. An industrial reserve of 100 million tons of iron ore from the Atasu and Karkaralinsk group of deposits is called for during the Five-Year Plan.

The establishment of the Temir-Tau complex, as well as that of Dzhezkazgan, leads to the most far-reaching shifts in the industrial geography of Kazakhstan, sharply increasing the industrial significance of the central regions. Formerly, the chief industrial centers -- Emba, Altay, Alma-Ata, and Chimkent -- were located along the outer borders of Kazakhstan.

The new city of Temir-Tau (formerly Samarkand settlement), having branched off from Karaganda, will become the ferrous-metallurgy center of Kazakhstan. Temir-Tau is located about 35 km northwest of Karaganda.

The climate there is strictly continental. Summer is hot, winter is cold with strong winds. In view of the small amount of rainfall (260-280 mm), only the Nura River continues to flow throughout the entire summer. The source of the Nura is located in the heights of the Karkaralinsk Mountains, where there is more abundant precipitation.

Located in the immediate vicinity of the Karaganda coking-coal basin and on the shore of the extensive Samarkand Reservoir, which was created by damming the Nura River and which is tremendously important in supplying water to the metallurgical combine, Temir-Tau is also advantageously located in regard to iron and manganese ore supply. Iron-ore deposits are located 250 km to the west and 220 km to the east of Karaganda, which is about one half as far as any Donbass plant from the Krivoy Rog deposits. Manganese ores are located 250-420 km from Karaganda.

Iron ores of the Atasu group, found on the various slopes of the Kazakh heights, are located in the Atasu River basin, 40-50 km from the Dzhezkazgan-Znaryk rail line. Atasu hematites contain 40-60 percent iron, insignificant

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traces (to 0.7 percent) of phosphorus, 0.01 - 0.32 percent sulphur, and up to 3.0-4.0 percent manganese. The fact that these ores do not require concentration is of great economic significance in the conservation of the water supply of this arid region. The Kara-Dzhal and Bolshoy Kray deposits have been the most widely prospected.

The Karkaralinsk group consists of 20-25 deposits. The most widely prospected of these are the Ken'-Tyube-Togay deposits which are located 50 km from the city of Karkaralinsk along both banks of the Kadyr River, which dries up. In the northern foothills of the Karkaralinsk Mountains these hematite and magnetite deposits contain iron on an average of 55 percent (Togay I), 45 percent (Togay II), and 60 percent (Ken'-Tyube). The phosphorous content amounts to 0.03--0.05 percent. The sulphur content increases with depth.

In the next few years the Akmolinsk-Pavlodar rail line will pass through this region. It will stimulate the development of the whole Karkaralinsk mountain region, which is rich not only in iron but also in copper, lead, silver, and timber for building purposes.

The manganese industry, which arose in the Karsakpay region during the war years, depends upon the high-grade manganese deposits at Dzhezdy and Nayzatas. Besides the deposits at Karsakpay, manganese has also been found in connection with the iron ores of Atasu. The manganese industry will develop also in this region during the new Five-Year Plan.

The Karaganda coal basin also will grow as it receives a new large-scale consumer, the Kazakh Metallurgical Plant. The extensive Sarma' coal region 25 km southwest of Karaganda will be developed during the new Five-Year Plan. This coal is even less ash-producing than Karaganda coal.

In addition to the metallurgical plant, a series of enterprises are being built in Temir-Tau. Power generation by the Karaganda GES will be increased fourfold during the Five-Year Plan. This plant, put into operation in 1942, is located at the dam on the Nura River (on the shore of the Samarkand Reservoir).

The new city of metal, chemistry, and power, even at the present time, has a large population and is a large-scale consumer of water. The Samarkand Reservoir will be greatly enlarged by the end of the Five-Year Plan.

Other branches of the ferrous metallurgical industry of Kazakhstan are also being built up. The construction of the next line of the Aktyubinsk Ferroalloys Plant is being worked out. Mining of chromites will grow fourfold; by 1950, smelting of ferrochrome will increase by about three odd times as compared with 1945.

Construction of a ferroalloys plant in South Kazakhstan will be undertaken on the basis of enormous reserves of metallurgical ores at Kara-Tau and Dzhebagly (Dzhambul Oblast), which have been explored during the last 4 years.

The number of scientific personnel of Kazakhstan is also growing. The Kazakh Academy of Sciences was opened in 1946 in Alma-Ata. The Academy has a large Institute of Geology, which will do much for the investigation of Kazakhstan's mineral resources.

New groups of Kazakh workers were trained in the old metallurgical centers of the country (Alapayevsk, Nizhniy Tagil, Chusovoy, Beloretsk, Vyksa, Stalinsk, etc.) during the process of developing ferrous metallurgy, a branch of industry entirely new to Kazakhstan.

The socialist cities of Temir-Tau and Sarma', located in the regions of the magnificent new plants, are being built according to a unified plan. Workers' settlements are making their appearance in the ore-mining regions.

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Along with them, kindergartens, nurseries, schools, hospitals, clubs, libraries, theaters, and radio stations are being built on the semidesert steppes of Kazakhstan. The natural landscape of Kazakhstan's deserts and semideserts is being changed.

Metallurgists in Temir-Tau are moving from adobe barracks into two-story, eight-apartment houses. In the valleys of the Sokur and Keragandinka Rivers, in the region of the ancient landmark of Bay-Tam, where up to this time the tomb of an unknown bey was the only sight, the first section of a future coal city, Saran', consisting of two-story houses, has already arisen.

Suburban agriculture (vegetables, potatoes, and milk) is developing near Temir-Tau and Saran'.

[Maps are appended.]

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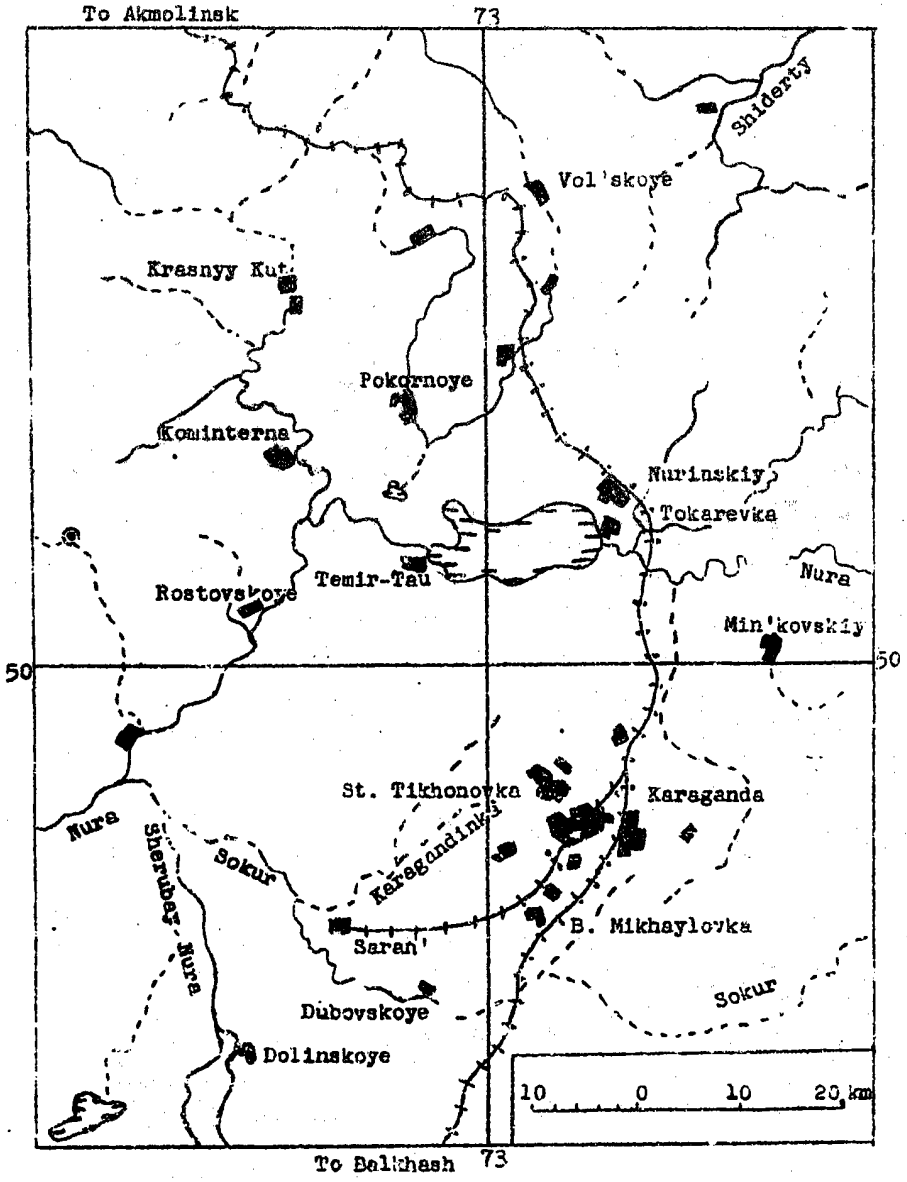
Temir-Tau Area



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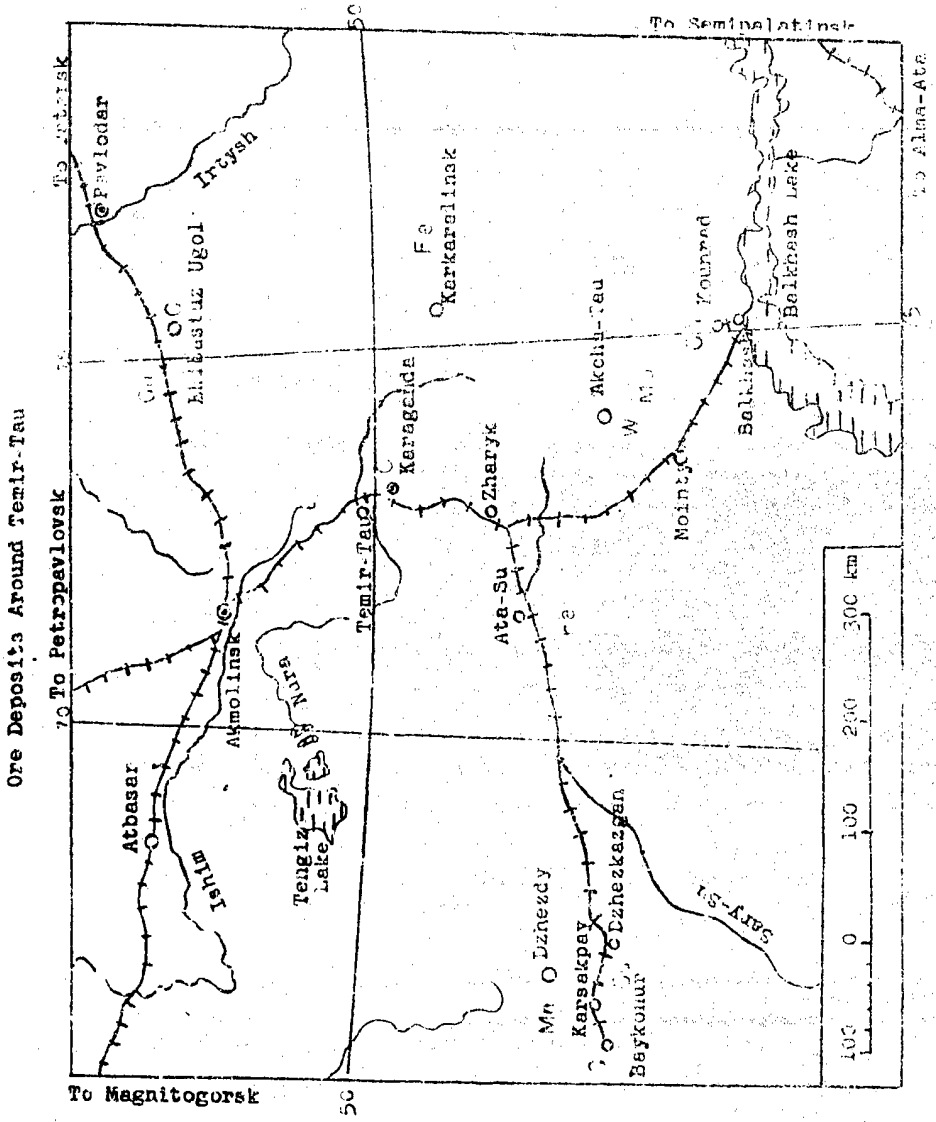

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